REMARKS

The Examiner has objected to the drawings for not showing a feature of the invention specified in the claims, specifically the flow rate measurement location of claim 2, measurement at the influent flow. Applicant has amended the Figure to indicate the influent flow meter by the number "25" and further to indicate the chemical dosing controller as "50." No new matter has been added by this amendment.

The Examiner has requested that Applicant check the specifications for minor errors. Applicant has done so and has amended the specification at page 15, line 15 to change the word "secondary" to "tertiary" as indicated by the paragraph prior to and immediately after the amendment. No new matter has been added by this amendment.

Claims 35-39 are allowed. By this amendment, claims 2, 3, 5, 6, 7 and 17 are canceled; claims 1, 4, 13, 16, 18, 20, 25, 28, 29 and 30 are amended; and claims 1, 4, 8-16, 18-34 are pending. Claims 1-2 and 5-12 were rejected as anticipated by Oxford, or Schuk et al. Claim 3 was rejected as obvious in view of Oxford or Schuk and Myers et al. Claim 3 has been cancelled.

Claims 13-15, 17-19, and 25-27 are rejected as obvious in view of Oxford U.S. Patent No. 4,060,097 or Schuk et al., U.S. Patent No. 3,760,829. Claims 4, 16, 20-24, and 28-34 were indicated as allowable but were objected to as depending from a rejected base claim. Claims 4, 16, 20-24, and 28-34 have been amended according to the suggestion of the Examiner. Further examination of the application, as amended, and reconsideration of the objections and rejections are respectfully requested.

Claim 1-2 and 5-12 were rejected as anticipated by Oxford '097 or Schuk et al. '829. Claim 1 has now been amended to more clearly

distinguish the invention as claimed from the cited references. Claim 1 as amended adds the limitation of measuring the liquid flow at either the influent flow, the effluent flow or both to generate a flow rate signal. This allows flexibility to the operator to best determine where to place the effluent flow meter depending on the character of the water treatment plant. Applicant's unique feature of accounting for lag time allows flexibility in positioning the flow meter anywhere in the treatment system. Neither the Schuk or Oxford reference anticipates this feature of applicant's invention, nor do Schuk or Oxford consider the issue of lag time.

Neither Schuk nor Oxford discuss how to deal with lag time caused by measuring flow in one location while introducing control chemicals in another location as does Applicant. *see Applicant page 14, lines 24-28, page 15, lines 5-20.*

Neither patent reference suggests placement of the flowmeter in the effluent line. In fact, Schuk teaches away from applicant's invention because the Schuk apparatus must have the flowmeter in the influent flow. *see Schuk, Fig. 1 and Fig.2.* According to Schuk's disclosure "the inlet ammonia concentration and wastewater flow will vary with time. The chlorine dosage must be set and controlled in proportion to the ammonia feed. *see Schuk, col. 4, lines 31-33.*

Neither the Schuk nor the Oxford patent reference recognize or discuss the problems that arise because of placement of the flow meter in the effluent flow nor do they solve these problems. As discussed in Applicant's specification, page 12, lines 10-18, if the flow meter is in the effluent flow, the reading will have a time lag due to detention time in the process plant piping and tankage. This time lag can be accounted for in the chemical dosing controller 50 by the system operator.

Oxford '097 does not anticipate Applicant's invention because Oxford '097 does not measure flow rate or chemical concentration. Oxford

merely detects the presence of flow by a flow detector means 14 to detect pressure caused by the flow of etchant from the etching machine 10. *See Oxford, col. 4, lines 6-10.* Oxford uses a color sensor to detect the color of the chemical, cadmium sulfide, and monitor the color density. The color sensor 24 enables a meter relay means 32. The response is triggered by a specific color density. There are no variables. No measurements or calculations are performed as occurs in Applicant's invention. *see Oxford, col. 4, lines 12-25.* The control method described by Oxford is either "on" or "off". It is not a variable dependent on chemical concentration or flow. *See Oxford, col. 4, lines 66-69.* Applicant's flow meter measures a variable water flow rate by an electronic flow meter 25 in quantifiable numbers that are used in calculations within the chemical dose controller. *See Applicant specification, page 12, lines 10-20.* Oxford does not anticipate Applicant's invention.

RESPONSE TO REJECTION OF CLAIMS 3, 13-15, 17-19, and 25-27 UNDER 35 U.S.C. §103

The Office Action has rejected claim 3 13-15, 17-19, and 25-27 under 35 U.S.C. §103 as being unpatentable over Oxford or Schuk, and, as to claim 3 in view of Myers et al. Applicant has canceled claims 3 and 17 but has incorporated the limitations of claims 3 and 17 into claims 1 and 13 respectively and will be discussed in that light.

OFFICE ACTION HAS NOT ESTABLISHED A *PRIMA FACIE* CASE

Oxford does not measure either flow rate of chemical concentration in a liquid treatment system. Oxford merely detects the presence of water

flow and chemicals in a method of chemical etching and does not anticipate or make obvious Applicant's invention. Schuk does not anticipate or make obvious the flexibility of Applicant's method of measuring liquid flow rate within either the influent or effluent flow.

Myers '786 discloses a variable rate fertilizer injection system that responds to a measured rate of water flow by injecting a pre-measured amount of chemical additive into an irrigation line. In Myers, the flowmeter provides a totalized output which supplies a triggering pulse to a flow control timer circuit after a predetermined amount of water has passed through the system. The flow control timer 34 will activate a time delayed output circuit 40 which closes an electrical contact 42. After contact remains closed for a preset period of time, the timer opens a solenoid for a preset period of time thereby injecting a predetermined amount of chemical into the line. *see Myers, col. 3, lines 29-45; col. 4, lines 8-11 and col. 2, lines 21-39.* Applicant's method uses the liquid flow rate measurement as well as the chemical concentration measurement to calculate a specific dosage of chemicals. This calculated dosage is then transmitted as a dosing signal or output signal to the chemical feeding system. Myers does not teach or suggest, among other things, Applicant's method of measuring chemicals to analyze the proper dosage of chemicals to add to the wastewater treatment system. Nor does Myers teach that a time lag due to detention time in the process plant piping must be accounted for when measuring effluent water flow rate. Applicant's method allows the system operator to account for this time lag in the chemical dosing controller 50 . *see Applicant, page 12, lines 16-18.*

NO MOTIVATION TO COMBINE PRIOR ART REFERENCES

In order for a claim to be invalid for obviousness over a combination of references, there must have been a motivation to combine the prior art references to produce the claimed invention. *Lindemann Maschinenfabrik*

GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 488 (Fed. Cir. 1984). There is no teaching or suggestion of applicant's method as claimed, explicitly or implicitly, in any of these references, taken individually or in any conceivable combination.

The difference between applicant's method of claim 3, now incorporated into amended claim 1, 13-15, 17-19, and 25-27 and Schuk or Oxford in view of Myers results in different methods of dosing chemicals. Thus, both Schuk and Oxford either alone or in combination with Myers fail to anticipate or render obvious applicant's method claimed in amended claim 1. The Myers patent is cited only to show that a paddle wheel flowmeter can be placed in an effluent line but does not analyze the effluent flow rate or account for time lag that occurs in measuring the effluent flow rate. Myers fails entirely to bridge the gap between Oxford or Schuk and applicant's invention.

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. The mere fact that the art may be modified in the manner suggested by the Office Action does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch,* 23 USPQ2d 1780, 1783-4 (Fed. Cir. 1992)

In view of the foregoing, it is respectfully submitted that the application and all pending claims are in condition for allowance. Upon further examination of the application, as amended, and reconsideration of the objections and rejections, allowance of all claims is respectfully requested. If there are remaining issues, applicant hereby requests a telephonic interview with undersigned counsel.

SUMMARY

Applicant has canceled claims 2, 3, 5, 6, 7, 17 and amended claims 1, 4, 13, 16, 18, 20, 25, 28, 29 and 30. Claims 35-39 are allowed. Claims 1, 4, 8-16, 18-34 are pending. Applicant respectfully submits that the rejection of 1, 6-12 based on anticipation and claims 3, 13-15, 17-19 and 25-27 based on obviousness is improper because the Examiner has not established a prima facie case of either anticipation or obviousness. Neither Schuk nor Oxford anticipates each and every element of Applicant's claims. There is no suggestion in the art of the desirability of the combination proposed by the Examiner. In view of the foregoing, it is respectfully submitted that the claims in the present application are in condition for allowance. Reconsideration of the rejection is respectfully requested. Allowance of Claims 1, 4, 8-16, 18-34 at an early date is solicited.

Respectfully submitted,

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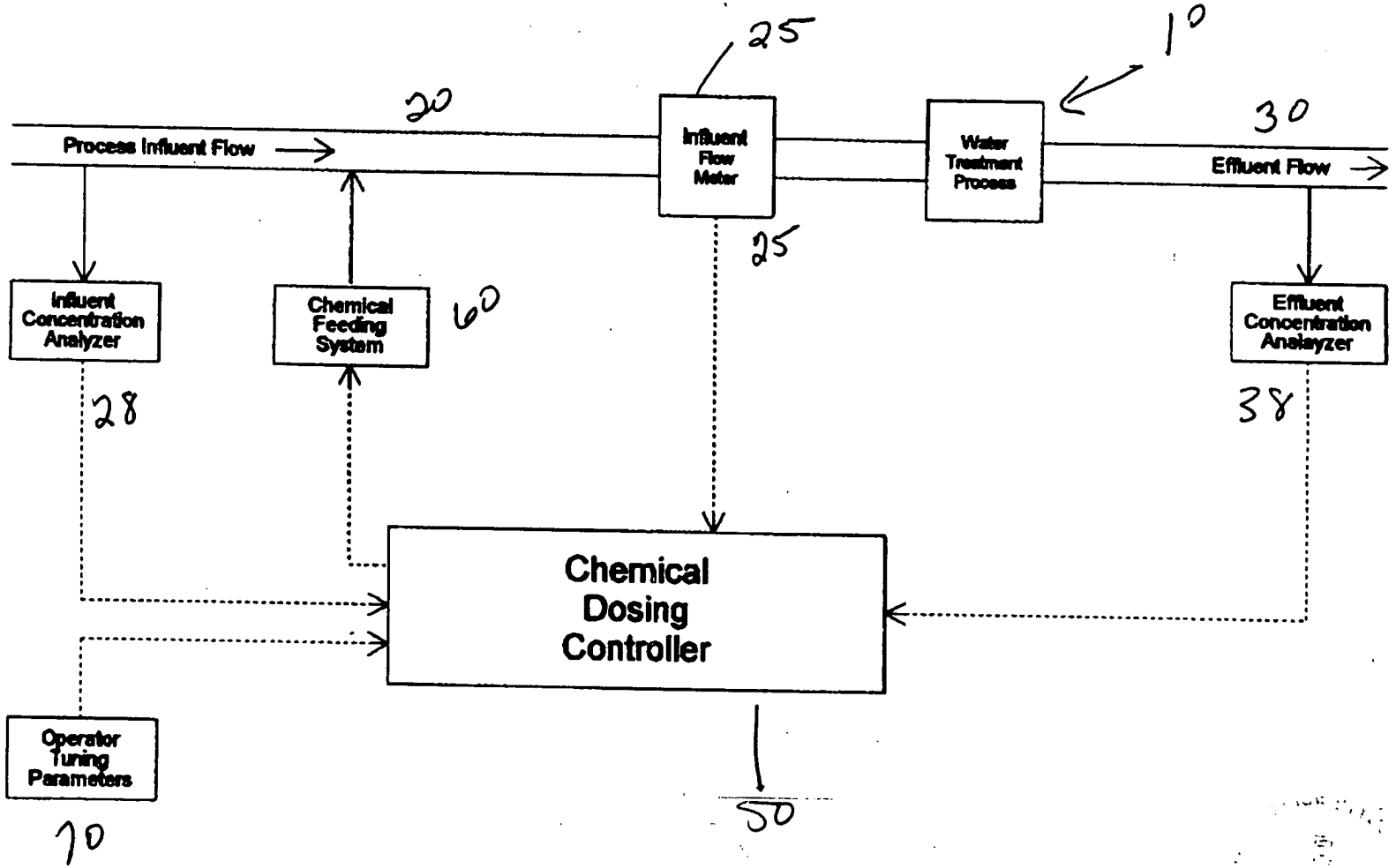
Process Influent Flow
Influent Flow Meter
Water Treatment Process
Effluent Flow
Influent Concentration Analyzer
Chemical Feeding System
Effluent Concentration Analyzer
Chemical Dosing Controller
Operator Tuning Parameters
20
25
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25
28
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